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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/802,039 | 03/17/2004 | Wenxi Huang | 035394-0256 | 3460 |
| 22428 | 7590 | 02/15/2005 | EXAMINER | |
| FOLEY AND LARDNER SUITE 500 3000 K STREET NW WASHINGTON, DC 20007 | | | YU, MELANIE J | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1641 | |

DATE MAILED: 02/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 10/802,039 | Applicant(s) HUANG ET AL. | |
| | Examiner Melanie Yu | Art Unit 1641 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 January 2005.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-94 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☐ Claim(s) _____ is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☒ Claim(s) 1-94 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-20 and 82 are drawn to a hydrogel polymer blend, classified in class 436, subclass 501.
- II. Claims 21-50, 82, 86 and 92 are drawn to a hydrogel polymer comprising a synthetic second polymer, classified in class 436, subclass 514.
- III. Claims 51-70 are drawn to a substrate comprising a substrate surface and hydrogel polymer blend, classified in class 436, subclass 515.
- IV. Claims 71-81 are drawn to a method for functionalizing a surface, classified in class 435, subclass 287.2.
- V. Claim 83 is drawn to a method for detecting a biomolecular analyte, classified in class 435, subclass 7.1.
- VI. Claim 84 is drawn to a crosslinked blend comprising a polysaccharide, classified in class 436, subclass 529.
- VII. Claim 85 is drawn to a hydrogel precursor polymer blend, classified in class 436, subclass 518.
- VIII. Claims 87-91 are drawn to a hydrogel polymer blend comprising one or more functionalities for selectively binding a biomolecular analyte, classified in class 436, subclass 528.
- IX. Claim 93 is drawn to a hydrogel polymer blend comprising a first and second polymer photocrosslinked to each other, classified in class 436, subclass 531.

- X. Claim 94 is drawn to a hydrogel polymer blend comprising reactive groups, classified in class 436, subclass 8.

The inventions are distinct, each from the other because of the following reasons:

1. Inventions of each of groups I-III and VI-X are patentably distinct. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different functions. The product of group I requires the functionality for selective binding a biomolecular analyte in the first and second polymer to be the same or different, which is not required of the products of groups II, VI or VIII-X. The product of group I requires a photocrosslinkable functionality, which is not required of the product of group III. The product of group I requires the first and second polymer to be crosslinked, which is not required of the product of group VII. The product of group II requires a synthetic second polymer, which is not required of the products of groups I, III or VI-X. The product of group III requires a substrate, which is not required of the products of groups I, II or VI-X. The product of group VI requires a polysaccharide, which is not required of the products of groups I-III or VI-X. The product of group VII requires one or more energy absorbing moieties, which is not required of the products of groups I-III or X. The product of group VII also requires a second polymer comprising the functionality for selectively binding a biomolecular analyte, which is not required of the product of group IX. The product of group VIII requires one or more functionalities for selectively binding a biomolecular analyte by covalent or non-covalent binding, which is not required of the products of groups I-III, VI-VII, IX or X. The product of group X requires the hydrogel to promote the desorption of associated

Art Unit: 1641

analyte, which is not required of the products of groups I-III, VI-VIII, and X. The product of group X requires a hydrogel comprising reactive groups capable of forming a covalent bond with a biomolecule, which is not required of the products of groups I-III and VI-IX.

2. Inventions of a) each of groups I-III and VI-X and b) group IV are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the products of groups I-III and VI-X can be made by the materially different process of crosslinking the compositions before applying to a substrate surface.

3. Inventions of a) each of groups I-III and VI-X and b) group V are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the products of groups I-III and VI-X can be used in the materially different process of separation of a biomolecular analyte from a sample.

4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification and because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

Art Unit: 1641

5. This application contains claims directed to the following patentably distinct species of the claimed invention: Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. If group I is elected, ONE SPECIES FROM *EACH* OF SPECIES GROUPS A-C must also be elected. If group II is elected, ONE SPECIES FROM *EACH* OF SPECIES GROUPS A-C must also be elected. If group III is elected, ONE SPECIES FROM SPECIES GROUP B must also be elected.

Group A is drawn to the crosslinkable functionality (elect one of the following species): benzophenone, diazo ester, aryl azide, or diazirine.

Group B is drawn to the functionality for selective binding (elect one of the following species): covalent binding or non-covalent binding.

Group C is drawn to the crosslinking (elect one of the following species): photocrosslinking or thermal crosslinking.

Currently, claims 1, 21 and 51 are generic.

Each of the crosslinkable functionalities are patentably distinct because they require different core structures. Each of the species of group B are patentably distinct because they require different types of bonds and are therefore structurally different. The species of group C are patentably distinct because they require different types of activation.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the

Art Unit: 1641

limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

1. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie Yu whose telephone number is (571) 272-2933. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on (571) 272-0823. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1641

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Melanie Yu
Patent Examiner
Art Unit 1641



LONG V. LE
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TECHNOLOGY CENTER 1600

02/14/05